

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q90558

Hiroyuki KAKINUMA, et al.

Appln. No.: 10/551,115

Group Art Unit: Not Yet Assigned

Confirmation No.: 4326

Examiner: Not Yet Assigned

Filed: September 28, 2005

For: HETEROARYL 5-THIO-B-D-GLUCOPYRANOSIDE DERIVATIVES AND  
THERAPEUTIC AGENTS FOR DIABETES CONTAINING THE SAME

**REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT**

**ATTN:** Office of Initial Patent Examination  
Filing Receipt Correction  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

We enclose a copy of the Official Filing Receipt for the above-identified application and request the following correction:

**Assignment for Published Patent Application**

TAISHO PHARMACEUTICAL CO., LTD.

**Foreign Application**

JAPAN 2003-097838 04/01/2003

JAPAN 2003-404959 12/3/2003

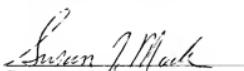
**Title**

HETEROARYL 5-THIO-BETA-D-GLUCOPYRANOSIDE GLUCOPYRANOSIDE  
DERIVATIVES AND THERAPEUTIC AGENTS FOR DIABETES CONTAINING  
THE SAME

Request for Corrected Official Filing Receipt  
U.S. Appln. No. Q90558  
Page 2

Verification for the requested correction is indicated on the enclosed copy of the original Declaration, Assignment and Filing Receipt evidencing receipt at the OIPE on September 28, 2005.

Respectfully submitted,

  
\_\_\_\_\_  
Susan J. Mack  
Registration No. 30.951

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE:  
**23373**  
CUSTOMER NUMBER

Date: July 11, 2006



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPL NO	FILING OR 371 (S) DATE	ART UNIT	FIL FEE REC'D	ATTY DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/551,115	09/28/2005	1623	2210	Q90558		16	2

## CONFIRMATION NO. 4326

23373  
 SUGHRUE MION, PLLC  
 2100 PENNSYLVANIA AVENUE, N.W.  
 SUITE 800  
 WASHINGTON, DC 20037

## FILING RECEIPT



\*OC000000018923726\*

Date Mailed: 05/25/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

## Applicant(s)

Hiroyuki Kakinuma, Tokyo, JAPAN;  
 Masakazu Sato, Tokyo, JAPAN;  
 Hideaki Amada, Tokyo, JAPAN;  
 Hajime Asanuma, Tokyo, JAPAN;  
 Yuko Tsuchiya, Tokyo, JAPAN;

**Power of Attorney:** The patent practitioners associated with Customer Number 23373.

## Domestic Priority data as claimed by applicant

This application is a 371 of PCT/JP04/01272 02/06/2004.

## Foreign Applications

JAPAN 2003-097838 04/01/2003 *<- JAPAN 2003-104591 12/31/2003*  
 If Required, Foreign Filing License Granted: 05/23/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/551,115**

Projected Publication Date: 08/31/2006

Non-Publication Request: No

Early Publication Request: No

**Title**

Heteroaryl 5-thio-beta-D-glucopyranoside derivatives and therapeutic agents for diabetes containing the same

**GLUCOPYRANOSIDE**

**Preliminary Class**

514

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process simplifies the filing of patent applications on the same invention in member countries, but does not result in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

**LICENSE FOR FOREIGN FILING UNDER  
Title 35, United States Code, Section 184  
Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted

under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

# DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 C.F.R. 1.63)

## 実用・意匠特許出願宣言書および委任状 (37 C.F.R. 1.63)

### Japanese Language Declaration

私は以下の通り宣言します：

各発明者の住所、郵送先、および国籍は下記氏名の後に記載された通りです。

下記名称の発明に関し請求範囲に記載され特許出願がされている発明内容につき、下記に記載された発明者が本来かつ最初の発明者であると信じます。

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上記発明の明細書は本書に添付されます。

または

上記発明は米国出願番号あるいは PCT 国際出願番号 \_\_\_\_\_ (確認番号 \_\_\_\_\_) として \_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日に出願され、 \_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日に補正されました (該当する場合)。

私は補正が上に明示された場合は補正された特許請求範囲を含む前記明細書の内容を検討し、理解していることをここに表明します。

私は一部継続出願の場合先行出願の出願日から一部継続出願の国内あるいは PCT 国際出願日までの期間中に入手された重要な情報を含み、37 C.F.R. 1.56 に定義される特許性に肝要な情報について開示義務があることを認めます。

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

HETEROARYL 5-THIO- $\beta$ -D-GLUCOPYRANOSIDE  
DERIVATIVES AND THERAPEUTIC AGENTS  
FOR DIABETES CONTAINING THE SAME

the specification of which is attached hereto

OR

was filed on February 6, 2004  
as United States Application Number or PCT  
International Application Number PCT/JP2004/001272  
(Confirmation No. \_\_\_\_\_),  
and was amended on  
\_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part application(s), material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

## Japanese Language Declaration

私は 35 U.S.C. 119(a)-(d) あるいは (i), または 365(b) に基づき特許、発明者、あるいは植物育種家証書の下記外国出願、または 365(a) に基づきアメリカ合衆国以外の少なくとも 1ヶ国を指定した下記 PCT 国際出願についての国外優先権特典をここに主張するとともに、下記項目に印を付けることにより優先権を主張する出願以前の出願日を有する特許、発明者、あるいは植物育種家証書の外国出願または PCT 国際出願を示します。

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (i), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application(s) which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application(s) having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)  
先行外国出願番号

97838/2003 \_\_\_\_\_ Japan \_\_\_\_\_  
(Application Number) (Country)  
(出願番号) (国名)

404959/2003 \_\_\_\_\_ Japan \_\_\_\_\_  
(Application Number) (Country)  
(出願番号) (国名)

私は 35 U.S.C. 119(e)に基づき下記の米国仮特許出願の国内優先権をここに主張します。

\_\_\_\_\_ (Filing Date)  
(Application Number) (出願番号) (出願日)

\_\_\_\_\_ (Filing Date)  
(Application Number) (出願番号) (出願日)

私は 35 U.S.C. 120 に基づき下記米国特許出願、あるいは 365(c)に基づき米国を指定する下記 PCT 国際出願の利益をここに主張し、本特許出願内特許請求範囲の各項目の内容が 35 U.S.C. 112 の最初の項に規定される方法により先行米国あるいは PCT 国際特許出願で開示されていない限りにおいて 37 C.F.R. 1.56 に定義される本出願の特許性に肝要で、先行特許出願の出願日から本特許出願の国内あるいは PCT 国際出願日までの期間中に入手された情報について開示義務があることを認めます。

Prior U.S. or International Application Number(s)  
先行米国あるいは国際出願番号

\_\_\_\_\_ (Filing Date)  
(Application Number) (出願番号) (出願日)

\_\_\_\_\_ (Filing Date)  
(Application Number) (出願番号) (出願日)

私は本宣言書内で私自身の知識に基づいてなされたすべての陳述が真実であり、情報および信するところに基づいてなされたすべての陳述が真実であると信じていることをここに宣言し、さらに故意になされた虚偽の陳述等々は 18 U.S.C. 1001 に基づき罰金あるいは拘禁または両方による懲罰にあたり、またかような故意による虚偽の陳述はそれにに基づく特許出願あるいは成立特許の有効性を危うくする可能性があることを認識した上でこれらの陳述をなしたことを宣言します。

Priority Claimed?  
優先権の主張?  
Yes  No   
有り 無し

April 1, 2003 \_\_\_\_\_  
(Filing Date)  
(出願日)

December 3, 2003 \_\_\_\_\_  
(Filing Date)  
(出願日)

I hereby claim domestic priority under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

I hereby claim benefit under 35 U.S.C. 120 of any United States application(s) or 365(c) of any PCT international application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in a listed prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge my duty to disclose any information material to the patentability of this application as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

\_\_\_\_\_ (Status: patented, pending, abandoned)  
(状態: 特許成立済、係属中、放棄済)

\_\_\_\_\_ (Status: patented, pending, abandoned)  
(状態: 特許成立済、係属中、放棄済)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

## Japanese Language Declaration

委任状：私は下記の米国特許商標局（USPTO）顧客番号のもとに記載される SUGHRUE MION 法律事務所のすべての弁護士を、同顧客番号のもとに記載される個々の弁護士は Sughrue Mion 法律事務所のみの自由裁量に基づき変更され得ることを認識した上で、本特許出願の手続きおよびそれに関わる米国特許商標局との業務を遂行する弁護士として指名し、本特許出願に関するすべての通信が同 USPTO 顧客番号のもとに提出された住所宛に送付されることを要請します。

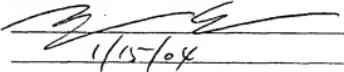
POWER OF ATTORNEY: I hereby appoint all attorneys of SUGHRUE MION, PLLC who are listed under the USPTO Customer Number shown below as my attorneys to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith, recognizing that the specific attorneys listed under that Customer Number may be changed from time to time at the sole discretion of Sughrue Mion, PLLC, and request that all correspondence about the application be addressed to the address filed under the same USPTO Customer Number.

### STATEMENT OF ACCURATE TRANSLATION IN ACCORDANCE WITH 37 C.F.R. §1.69(b):

The declaration and power of attorney is an accurate translation of the corresponding English language declaration and power of attorney.

Signature

Date



1/15/04

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

電話連絡は下記へ：

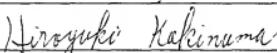
Direct Telephone Calls to:

SUGHRUE MION, PLLC  
(202) 293-7060

SUGHRUE MION, PLLC  
(202) 293-7060

### NAME OF SOLE OR FIRST INVENTOR:

唯一あるいは第一の発明者名

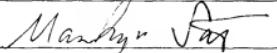
Given Name (first and middle [if any]) 名(名およびミドルネーム[該当する場合])	Family Name or Surname 姓
Hiroyuki	KAKINUMA
Inventor's signature 発明者の署名	Date 日付
	September 16, 2005
Residence: 住所:	Citizenship 国籍
Toshima-ku, Tokyo, Japan	Japanese

Mailing Address:

郵送先: c/o TAISHO PHARMACEUTICAL CO., LTD. of 24-1, Takata 3-chome, Toshima-ku, Tokyo 170-8633 Japan

### NAME OF SECOND INVENTOR:

第二の発明者名:

Given Name (first and middle [if any]) 名(名およびミドルネーム[該当する場合])	Family Name or Surname 姓
Masakazu	SATO
Inventor's signature 発明者の署名	Date 日付
	September 16, 2005
Residence: 住所:	Citizenship 国籍
Toshima-ku, Tokyo, Japan	Japanese

Mailing Address:

郵送先: c/o TAISHO PHARMACEUTICAL CO., LTD. of 24-1, Takata 3-chome, Toshima-ku, Tokyo 170-8633 Japan

## NAME OF THIRD INVENTOR:

第三の発明者名:

Given Name (first and middle [if any])  
名(名およびミドルネーム[該当する場合]) HideakiFamily Name or Surname  
姓 AMADA

Inventor's signature

Hideaki Amada

Date

日付 September 16, 2005

Residence:

住所: Toshima-ku, Tokyo, Japan

Citizenship

国籍 Japanese

Mailing Address:

郵送先: c/o TAISHO PHARMACEUTICAL CO., LTD. of 24-1, Takata 3-chome, Toshima-ku, Tokyo 170-8633 Japan

## NAME OF FOURTH INVENTOR:

第四の発明者名:

Given Name (first and middle [if any])  
名(名およびミドルネーム[該当する場合]) HajimeFamily Name or Surname  
姓 ASANUMA

Inventor's signature

Hajime Asanuma

Date

日付 September 16, 2005

Residence:

住所: Toshima-ku, Tokyo, Japan

Citizenship

国籍 Japanese

Mailing Address:

郵送先: c/o TAISHO PHARMACEUTICAL CO., LTD. of 24-1, Takata 3-chome, Toshima-ku, Tokyo 170-8633 Japan

## NAME OF FIFTH INVENTOR:

第五の発明者名:

Given Name (first and middle [if any])  
名(名およびミドルネーム[該当する場合]) YukoFamily Name or Surname  
姓 TSUCHIYA

Inventor's signature

Yuko Tsuchiya

Date

日付 September 16, 2005

Residence:

住所: Toshima-ku, Tokyo, Japan

Citizenship

国籍 Japanese

Mailing Address:

郵送先: c/o TAISHO PHARMACEUTICAL CO., LTD. of 24-1, Takata 3-chome, Toshima-ku, Tokyo 170-8633 Japan

## NAME OF SIXTH INVENTOR:

第六の発明者名:

Given Name (first and middle [if any])  
名(名およびミドルネーム[該当する場合])Family Name or Surname  
姓

Inventor's signature

発明者の署名

Date

日付

Residence:

住所:

Citizenship

国籍

Mailing Address:

郵送先:

## NAME OF SEVENTH INVENTOR:

第七の発明者名:

Given Name (first and middle [if any])  
名(名およびミドルネーム[該当する場合])Family Name or Surname  
姓

Inventor's signature

発明者の署名

Date

日付

Residence:

住所:

Citizenship

国籍

Mailing Address:

郵送先:

## Assignment

Whereas, I/We, Hiroyuki KAKINUMA, Masakazu SATO, Hideaki AMADA,  
Hajime ASANUMA and Yuko TSUCHIYA

hereinafter called assignor(s), have invented certain improvements in  
HETEROARYL 5-THIO-β-D-GLUCOPYRANOSIDE DERIVATIVES AND THERAPEUTIC AGENTS  
FOR DIABETES CONTAINING THE SAME

and executed an application for Letters Patent of the United States of America therefor on  
September 16, 2005 ; and

Whereas, TAISHO PHARMACEUTICAL CO., LTD. of 24-1, Takata 3-chome,  
Toshima-ku, Tokyo 170-8633 Japan

(assignee), desires to acquire the entire right, title, and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including the right to claim priority under 35 U.S.C. §119, and I/we request the Director – U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States application when called upon to do so by the assignee.

I/We hereby authorize and request our attorneys SUGHRUE MION, PLLC of 2100 Pennsylvania Avenue, NW, Washington, DC 20037-3213 to insert here in parentheses (Application number \_\_\_\_\_ and Confirmation number \_\_\_\_\_, filed \_\_\_\_\_) the filing date and application number of said application when known.

Date: September 16, 2005 Hiroyuki Kakinuma  
s/ Hiroyuki KAKINUMA

Date: September 16, 2005 Masakazu Sato  
s/ Masakazu SATO

Date: September 16, 2005 Hideaki Amada  
s/ Hideaki AMADA

Date: September 16, 2005 Hajime Asanuma  
s/ Hajime ASANUMA

Date: September 16, 2005 Yuko Tsuchiya  
s/ Yuko TSUCHIYA

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

(Signature)

REQUEST FOR EARLY NOTIFICATION OF SERIAL NUMBER

Inventors: Hiroyuki KAKINUMA, Masakazu SATO, Hideaki AMADA,  
Hajime ASANUMA and Yuko TSUCHIYA

Title: HETEROARYL 5-THIO-β-D-GLUCOPYRANOSIDE  
DERIVATIVES AND THERAPEUTIC AGENTS FOR DIABETES  
CONTAINING THE SAME

Atty Doc #: Q90558 Client: YUASA & HARA

Filing Date: September 28, 2005 # Pgs: Spec/Abst: 136,1 #Claims: 34/2

# Dwg Sheets: none Decl: yes Prelim Amdt: yes

IDS/Prior Art ISR: yes Pr Doc: no Asgmt: yes Fee: \$2210.00/40.00

Check Attached  Charge to Deposit # 19-4880 Atty/Sec: SJM/vf

SERIAL NO.:

CONF NO.:

